

ECONOMIC RISK, UNCERTAINTY AND THE FUTURES MARKET

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IN discussing Economic Risk, Uncertainty and the Futures Market, I want to explore how the modern concepts of risk and uncertainty can help us understand the operations which use, or have access to, the futures market. I am not concerned with schemes for forecasting the market, but rather with the policies that underlie the decision to make use of the market.

A. Economic risk and uncertainty are not the same thing. One of the early inquiries in this field was that of Frank H. Knight in his book, *Risk Uncertainty and Profit*. He said:

“Uncertainty must be taken in a sense radically distinct from the familiar notion of Risk, from which it has never been properly separated. The term “risk,” as loosely used in everyday speech and in economic discussion, really covers two things . . . It will appear that a measurable uncertainty, or “risk” proper, as we shall use the term, is so far different from an *unmeasurable* one that it is not in effect an uncertainty at all. We shall accordingly restrict the term “uncertainty” to cases of the non-quantitative (sic.) type.”¹

For our purposes it will be worthwhile to take a brief look at the full spectrum from certainty to uncertainty: (1) Pure

¹ Knight, Frank H., Ph.D., *Risk, Uncertainty and Profit*, Eighth Impression, 1957. The London School of Economics and Political Science, London, p. 19-20.

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uncertainty is an imaginary situation where nothing is known about anything and where there are no measurable variables, nor even an idea as to what factors are relevant to a problem.

(2) At the other extreme, complete certainty assumes that outcomes are sure and that all variables are measurable. (3) Between these two extremes there exist various degrees of uncertainty and these can be broken down in terms of certain important characteristics based on the kinds of uncertainty and the importance of the outcomes upon profits.

The definition of risk relates to quantifiable unknowns. In other words, we are dealing with a concept which can be expressed in probabilities and numbers. It is the field in which the actuaries resolve many individual uncertainties into broad but dependable, even certain, outcomes. In effect the process of converting "uncertainties" into "risks" is an important function of business and economic research, even though in each individual case it is not possible to come out with a single certain result.

"Uncertainty" has also been given a working-over by the decision-theorists in recent years. Uncertainties range from the utter and unclassified chaos of ignorance up to the point where the decision maker can work out an assortment of outcomes associated with his possible decisions, but he still has no basis for assigning probabilities to any of them. It's still a chancy decision but, as in playing bridge, you decide which is the best way to finesse the queen, assuming you decide to finesse her.

Looking again at the spectrum which runs from absolute uncertainty (some people say this implies a state of complete insanity) to the other unattainable extreme of complete certainty, it is easy to see that most business judgments contain elements that are akin to each extreme. The job which the businessman faces in many of his decisions is simply one of

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lining up his decision-making activities in such a way that he minimizes the amount of what we are calling uncertainty either (a) by getting more information; (b) by better analysis and management of relevant factors; or (c) by making actuarial appraisals of risks in such a way that he is protected by broadening his exposure to avail himself of a less uncertain average result.² Or, finally, he can sometimes (d) accept the uncertainty entailed in an operation and try to offset it by establishing a countervailing commitment for the primary purpose of offsetting a part of that uncertainty.

B. On the basis of this simplified framework it may be interesting to reexamine where the futures market can play a part. It seems clear that for many speculators, futures contracts represent simply a vehicle whereby they expose themselves to uncertainty in hope of realizing a large gain. Such speculators include some who base their activities upon extensive economic and statistical analyses, and others who assume they are reducing their own uncertainty by leaning on the advice of others. On many occasions the speculator uses no rational technology for advancing his own objective and falls victim to the fact that even if all the price movements were pure chance, the quantifiable costs which he incurs in the form of commissions will inevitably load the scales so that the net probability is on the side of an adverse outcome in the long run.

I suppose that we could use the commission broker as an example of someone over near the "certainty" end of the scale. This is straining a bit for the purpose of illustrating a point, but it is clear that the commission broker conducts his business with a knowledge as to what his exposure to risk will be.

²The question of diversification is largely of this nature — a dispersal of uncertainties by extending the exposure over a wide enough field to reduce the *relative* severity of any one adverse outcome. As a general principle, it dilutes rather than enhances *profits*, but, properly planned, it does reduce the over-all degree of uncertainty.

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Technically he is a party in the trading, so far as the transactions are concerned, but his client instantly takes over the big unknown elements and the broker's revenues are scaled according to a well-established schedule. (For him the great uncertainty revolves around the question of how much business he will do, not about what happens in the price movements for the commodities traded on the exchange.)

This brings us to the major problem which deserves careful attention. If the futures market is to be thought of as a useful adjunct in the kind of economic system to which we subscribe, it may be defended in considerable part by the argument that the futures market enables businessmen performing the necessary functions of supplying economic needs and allocating economic resources to make *their* many decisions more efficiently and with assurance that they are operating farther over toward the "certainty" area of our spectrum than would have been the case without the futures market. To illustrate, a farmer may be an expert at producing crops or livestock, but unskilled in undertaking the financial burden entailed in price risk exposures. He might be able to enlarge his production, using funds he can borrow against a hedged inventory. The flour miller does this; the cattle feeder may do more of it if cattle futures trading becomes successful.

C. Our next step requires an examination of the kinds of instruments we are dealing with in the organized futures markets. Here it seems desirable to consider the nature of the transactions that occur in these particular markets.

In general, transactions are economic linkages. They accomplish economic transfers or linkages in an interdependent system. If we are looking at the futures market as one which "trafficks in uncertainty," as I have heard it described, we need to know more about the vehicle that accomplishes the transfer of this uncertainty. Then we need to consider (1)

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the relationship of these transfers to the basic flows of goods and services, which comprise the mainstream to which futures trading is an adjunct. Furthermore, (2) the parties to the contract or transfer require our attention, for they are the ones who are making business decisions and attempting to resolve their uncertainties and risks. And, finally, (3) we must look at the futures exchange as an established economic institution, whose very existence provides a bundle of services that wouldn't be there without the exchange and its sanctions, guarantees, grading services, and so forth.

Our first task is to identify the vehicle, the contract for future delivery. It would be foolish to describe it in detail at this point; instead, I want to select two or three characteristics of the futures contract that are important to our discussion of risk and uncertainty. (a) The first characteristic is that the product specifications in the contract can serve as a *common denominator*. We choose a set of delivery terms—quantities, grades, locations and agencies—to define the contract. But we are not just interested in a single selected item or transaction in choosing our basic trading unit. We want a set of specifications that can be related (so far as price movements are concerned) to many transactions, not just those that are strictly defined in the contract. Not all—indeed only a small part—of the wheat covered by futures contracts ever moves physically to Chicago, Kansas City or Minneapolis. To illustrate the point more sharply, I would say dogmatically that it is best to have the contract specifications provide a set of standards which the trade can use as a quoting basis. This may or may not represent the largest volume selection or the highest traffic point. The best bellwether, not the biggest sheep, is what we're after; on a golf course we use "par" as our common denominator, rather than some score that is more likely to be attained by the average would-be golfer on the

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so-called average course. We want a basis for translating price risks from one transaction to another, and we want a unit that lends itself to reliable and easy use as a common denominator.

But at the same time, (b) we want actual deliveries to be practical for as many traders as want to make such deliveries. It is an aberration of the market when peculiar conditions at the delivery point make the common denominator un-typical, as when channels of trade are clogged, strikes or weather tie up transportation, or when deliverable storage holdings for one reason or another are undesirable in the trade. The futures market has an obligation, it seems to me, to minimize the frequency of such incidents. The fact that commodity futures contracts can terminate in the delivery of the tangible commodity is the primary linkage between this contract-trading world and that of physical commodities in the world of commerce.

So much for the nature of the contract and its specifications, what I have called the "vehicle." We can now turn to some of the operational aspects.

1. The first characteristic to be examined relates to the physical product flows and the nature of the risks that attend them. The futures market is not a thing apart, unrelated to the mainstream of business; otherwise it would be little more than a glorified horse race or gambling hall.

To find the essential relationship to the real product flows; we have to look at the commercial operations in terms of *price change over time*. This is a prime element of risk or uncertainty in many kinds of business, and the more acute the risk the more urgent is the need to seek ways of managing it.³ The risk is basically a result of having commodity com-

³ The acuteness of this risk can best be measured in terms of the relative impact of price change upon average profits as compared with the impact of other business factors.

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mitments — business can't get along without inventories, growing crops or goods in process, unfilled orders to buy or sell, or sometimes complicated contracts or even catalog listings that must be honored over a period of time.

Many kinds of devices have been employed in the effort of businessmen and others to manage their price risks. One of these is the use of last-in, first-out inventory accounting, a very successful device in some industries where there is a more or less fixed commitment to a basic or pipeline inventory. This is far from perfect protection, but it does prevent the changing price tags on closing inventories from one year to the next from showing up as profits or losses when essentially the same goods are inescapably there as a requirement if the business is to continue.

Another device is an averaging process which can be used for inventory valuation in some businesses, such as tobacco and perhaps others. This, again, softens but does not offer any complete insulation from the impacts of price change.

Other methods come readily to mind. Price stabilization activities of governments can sometimes be characterized as a "benevolent cornering of a market" for the purpose of discouraging transactions at other than prescribed prices. It goes without saying, of course, that this procedure can generate uncertainties as to changes in the government regulations and eligibility rules, for instance, which may be as serious as those price change uncertainties which are removed.

Escalation contracts are frequently used in one business or another, especially where specific longer time commitments are involved which are renewed at relatively infrequent intervals. In the March 1965 issue of the magazine *Broiler Industry* (p 11) an integrator was reported as having presold 75% of his production through mid-1966, or 15 months ahead, on a sliding scale formula with modifications designed to

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share the risk. Such deals are apparently becoming a fairly common practice in various trades, and are referred to, variously, as "share risk," "formula pricing," or "pricing in advance" deals.

Finally, we can list some of the specific characteristics of vertical industry complexes which have found futures market contracts a useful device. These are usually found where relatively long production cycles, as in agricultural or other extractive industries, make substantial inventory positions necessary, where broad trading in staple articles makes ownership positions reasonably fungible, and where supply or demand variations lead to substantial price fluctuations. Firms in these industries have plenty of other worries as they try to provide the necessary "time, place, and form utilities" without adding or exposing themselves to the hazards of gyrating prices. The managers in these industries have a plentiful bundle of risks to manage, but the impact of price change over time is perhaps the biggest. These are the people who really need the futures market. For others it may be a convenience or an opportunity, but for them it is almost a necessity, if their resources and skills are to be employed most effectively.

The risk of price change over time, therefore, is the essential generating need for a futures market; its use as an instrument will be discussed later, after considering the parties who use the market, and the nature of a futures exchange market itself.

2. It is always easy to over-simplify, and likewise to over-classify our second category, that of the people who trade in commodity futures. Our present purpose will be best served, however, by concentrating on two broad groups, those whose primary operations are confined to the futures market alone, and those who use the market primarily as an adjunct to other commercial activities.

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The first group is made up chiefly of the speculators and the floor traders. These participants give breadth to the market and they are almost always willing to take positions on either side of the market when the level of prices deviates from what they believe to be the "right" or the expected future price. They are dealers in uncertainty and risk—uncertainty when they are playing hunches or shooting in the dark, risk when they operate on the finer points of carefully analyzed situations, spreads and margins and the like. They provide a distinct service, but their activities are confined to operations within the market itself and they hope to secure a profit thereby.

The second group is made up of those who use the futures market as an adjunct to commercial operations outside the futures market, the dealers, the processors, the hedgers. This group tends to use the market primarily to reduce their biggest *uncertainty*—the danger of wide price swings—and to convert it to a manageable risk.

It is this second group which provides the market with its principal reason for existence, makes it a valuable service establishment instead of a casino. The first group makes the service possible by seeking out value factors, by taking risks, and by providing a broad basis for trading, but it is the second group that many economists are likely to classify as more "economically productive." They are the ones who service the actual product flow, the conversion of basic resources into finished goods available at the time and place people want them. By all odds the most important use of the futures market by this group is for trades which match some commitment in actual goods. However, the assortment of transactions and commitments of most businesses generally leave them with a net "at-risk position" other than zero. For such firms the futures market is an important instrument which permits a

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planned net at-risk position to be attained without cramping or inhibiting opportunities to serve commercial customers. Thus, not all trades by those usually referred to as hedgers are necessarily paired operations. The farmer or cattleman referred to above may carry the inventory of growing crops or livestock until he reaches a situation where he is willing to shift the major price-change risk to others, at which time he can sell futures contracts, which he will buy back when he delivers his finished products.

3. This leaves us to consider the role of the commodity exchange itself. This can be stated briefly, simply to complete the picture. It is the housekeeper, the referee, the provider of the trading facility. It is the custodian of the integrity of the whole operation. Supervised by government and by its own governing board, it issues rules, controls standards and practices, supervises deliveries, and, as a convenience, acts as middleman in each trade. Each futures contract is a commitment, long or short, with the exchange itself (with the exchange or the clearing house keeping its own total position neatly balanced to a net commitment of zero.)

D. What has been said about the various aspects of futures trading is not just to review the old familiar ground. Its purpose is to provide a perspective by focusing attention upon the particular factors that might help us to examine in a more meaningful way the relationships described in the title of my paper, "Economic Risk, Uncertainty and the Futures Market."

What we want to examine now is the place of the futures market in the total complex of risks and uncertainties faced by operators who use futures trading. This naturally divides itself into those transactions which stand alone as speculative commitments not related to any other commercial business of the same entrepreneur, and those transactions which are an adjunct to related commercial operations.

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Referring back to our spectrum which extended from complete Certainty to "pure" Uncertainty, the positions taken by various futures traders in the first category can schematically be arrayed according to the competence of the judgment they reflect and according to the degree of exposure that is entailed. To illustrate, there may be large outright positions on the long or short side taken by men who are "playing the market" on the basis of hunch, rumor, or dope sheet; at the same time other similar positions are taken by speculators who are thoroughly aware of what they are doing, have studied as carefully as possible the measurable factors that influence the market, and are proceeding according to a well devised plan. It is obvious that the former are operating in the area we have characterized as "Uncertainty" while the latter are contributing in a substantial way toward converting "Uncertainty" factors into "Risk" factors.

In this same group (people whose market commitment is not associated with commercial activities) are those, for instance floor traders, who narrow their risks by exposing themselves for only short periods (day traders) or tend to specialize in spreading between maturities, between markets or between commodities. These people contribute a great deal toward spotting and correcting temporary or illogical disparities within the market. Sometimes they become powerful enough to manipulate the market itself for short periods of time, in which case supervisory authorities are likely to be around with an eagle eye. The conclusion I would like to emphasize regarding this group of "intramarket" traders is that they make a contribution toward giving the market breadth and toward improving the focus of the forces in the market upon the determination of true economic values. As will be seen in discussing the second group, outside commercial considerations militate the position they take on the ex-

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change and the aggregate of such positions may be strongly unbalanced between long and short positions. Therefore, the flexibility of the speculators and traders tends to provide a demand on whichever side of the market there seems to be a deficiency, whether it be for long or short positions.

Of the second group of participants in the market, the "hedged" commodity dealers, growers, processors, etc., are often not much concerned about what the "right" level of price may be. The fact that they hedge out their price commitment implicitly assumes that they do not know, or do not care, which direction prices will move, or can't afford to undertake such an unknown exposure. Most of these people are trying to set up a transaction which will offset a part of the risk entailed in other commercial operations. So long as the net residual of an individual's matched commitment (usually referred to as his "basis") embraces price relationships which these traders are confident will not worsen during the life of their commitment, they need not much care whether prices are at the "right" economic level or not. These are people whose interest is not in appraising and taking on the *risks* of price change. Instead, they are intent upon *escaping* the *uncertainties* of price change by matching transactions, and thus limiting their risk to the residual factors which can't be precisely matched between their commercial commitments outside the futures market and the specific contract terms that apply to the transaction they are using on the exchange.

Of course, the transactions of growers, dealers and processors which are not matched to neutralize the major price risk element must be considered as speculative commitments in the sense that they result in a net exposure to the risk of price change. It should be noted, however, that these commitments are usually small in relation to the total trading by the firms involved, and that they usually represent considered positions

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based on careful study and analysis. In other words they would fall in the classification of carefully managed risks in most cases.

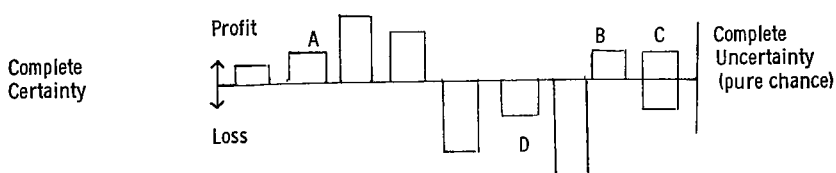
The Speculators

The speculator who takes a simple long or short position obviously believes that, at least over a period of time, he can by some means or other anticipate price movements and take advantage of them. We can conclude that the successful speculators in this class have managed to find a way to make right predictions more often than wrong ones. A decision to get out or even to do nothing, is as important as the decision to get into the market.

The net outcome of these decisions (measured in terms of the values committed times the per cent of price change incurred) should have some correlation with the degree to which complete uncertainty (equivalent to pure chance) is modified by information, analysis or judgment. There may be systematically unprofitable outcomes, as well as profitable ones, requiring replacements for those whose resources or endurance give out. The persistent loser is not a victim of pure chance; he is more likely to be the victim of poor information, poor analysis or poor judgment of a systematic sort.

We can therefore illustrate our speculators on our "certainty-uncertainty spectrum" in something like the following scheme:

Figure VII



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What shows up here is that the degree of uncertainty (in the form of zero information) *need* not be synonymous with the degree of loss. Even a poor poker player may win or lose, especially if his opponents are equally bad players. The really bad losses are suffered by those who have information but systematically misapply it. We would expect, however, to find the more frequent long run profits accruing to those who are best equipped with information analysis and judgment (area A), and results to be more mixed as we approach the pure chance end of the scale (areas B and C). The frequency of consistent losses is probably greatest among the half-informed or those with perversely faulty analysis or judgment (somewhere below the middle of the spectrum, in area D).

Some speculators use various trading devices to modify the nature of their risks, by juggling one position against another through spreading or arbitrage, or by setting limits of various kinds. These traders generally feel that they can judge or anticipate the intra-market adjustments among various contracts better than they can the actual price level changes for a particular contract. In any event they expect to profit by making correct anticipations regarding what will happen *within* the futures market itself, even though the forecast of actual price levels may seem to them to be either a "complete uncertainty" situation, or (if they are more sophisticated analysts) one in which the "risk" odds offer little to gain from an outright position.

The Hedgers

We will use this term loosely to identify those whose exchange transactions are used primarily as an adjunct to commercial commitments. We said before that while it is conceivable that a futures market made up entirely of speculators could be said to provide an economically justifiable service by giving a broader trading base in the process of price deter-

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mination over time — a time dimension for the total market — this is an unlikely justification for the existence of a futures market. Its primary justification is the fact that futures markets provide an extremely valuable adjunct in the handling of commodities themselves.

Others have expounded in considerable detail the mechanics whereby the businessman can use futures contracts to control his total exposure to the impact of price fluctuations. I am appending to this paper a brief note on the subject BASIS as a small contribution to this literature, but will not discuss it here. The important point here is that the futures contract is a valuable adjunct to the conduct of business.

Some people say there is no such thing as a complete “hedge.” There are always residual conditions in commercial transactions that are not completely matched by a counter-vailing position in a futures contract. This is true, as every man dealing in commodities knows. But, a position that is hedged in the futures market has made it possible for a businessman to split off one factor — the uncertainty of major price changes over time — and eliminate most of that particular uncertainty from the considerations he has to worry about as he performs his other services. These services — storing, processing, shipping, etc. — require him to have commitments to own or to deliver the physical commodity — commitments which are frequently far beyond the amounts he can afford to carry without price-change protection.

He can, with a futures market, divest himself of any responsibility for knowing or judging what price changes will occur in the commodities in which he has an ownership commitment. He can if he wishes regard the future changes of price as a factor at the “complete uncertainty” end of the spectrum so far as he is concerned. In other words, he can look upon this as a factor that is somebody else’s field of specializa-

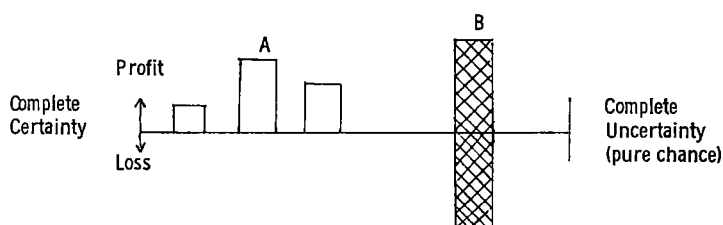
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tion. The "risk" elements he deals in — the trading conditions in which he is expert and in which his knowledge and judgment are more dependable — relate to the needs of his customers for special qualities, locations, delivery times and the like. In other words, since he is hedged, he doesn't have to administer a price risk; he divests himself of it.

Dr. Holbrook Working in some of his discussions has concluded that most hedges are entered into for a profit.⁴ I think this is saying again that no hedge is perfect, and that the skillful operator is simply freed, by virtue of having hedged the major price-change exposure, to earn a profit by properly administering those risks he feels he is most competent to administer.

This situation can be illustrated again by referring to our certainty-uncertainty spectrum, redrawn in the new context:

Figure VIII



Here the total transaction is broken down into two parts: In area A are the residual risks (the "basis" transactions) which embrace the special considerations affecting the physical commodity commitments *other than price change over time*. These are usually expressed as a premium or discount from the quoted nearby future. The price change exposure itself is effec-

⁴ Working, Holbrook, "Hedging Reconsidered," *Journal of Farm Economics*, November 1953, p. 544. This significant article discusses a number of types of "adjunct" uses of the futures market.

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tively neutralized by the “offset” phenomenon or hedge, illustrated by the crosshatched bar (B) placed for our purposes near the complete uncertainty end of the spectrum. The profit or loss prospects here can be ignored because they cancel out.

Certainly there are other uses besides hedging for which the businessman uses the futures market. After all, it is a channel for delivering commodities at the expiration of contracts. When it serves his purpose, it is therefore a useful instrument for procurement or sale. Moreover, it is a rare businessman who doesn't consider it wise at times to have a net exposed position, either in commodities themselves or in contracts. Here the futures market can serve a useful role as an extension of the total market, often a very efficient one, for adjusting his net exposed position to whatever he wants it to be, regardless of what he has to do to serve the needs of his trade clientele.

To discuss this last aspect of the commodity exchanges, however, would require us to go back and re-examine our “Certainty-uncertainty” spectrum in terms of all of the additional risks and uncertainties that relate to the whole field of inventory management in the conduct of business. In brief, the objective in risk management would seem to be to keep as many unhedged decisions as possible in the Measurable Risk area, and on the profit side of the center line; then confine the highly unmeasurable risks to matters that are either intrinsically unimportant in their profit impact, or to “minor residuals” left over after hedging out the big price uncertainty elements. Specific examples of futures operations which have been presented by other writers and speakers can be better understood and, I am convinced, better evaluated if they are analyzed in this context.

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To summarize the essential points that have been made:

- (a) Uncertainty deals with the unknown;
- (b) Risk is associated with the application of measurement, analysis and judgment for the purpose of moving as far as we can in the direction toward certainty and away from uncertainty;
- (c) Futures trading provides an instrument where specialists who wish to handle risks of price change can do so without having to handle the physical commodities; and at the same time,
- (d) The hedger has an instrument whereby he can escape, rather than having to overcome, price-change uncertainty as he performs his other useful services.

Primarily through the resourcefulness of American businessmen, we have created numerous devices for the intelligent management of the potential impact of price changes over time. An industrial structure cannot escape involvement in inventory commitments, but the individual businessman has three important types of alternatives or methods at hand for managing price risks:

- (a) Non-futures market devices such as control of physical inventories, use of last-in, first-out accounting, support prices, forward booking, etc.
- (b) Use of a futures market to adjust his net exposure to price risks according to a carefully studied plan of risk management.
- (c) Use of a futures market to escape the major price unknowns through hedging.

It might be offered as a golden rule for business managers that they should seek risks but shun uncertainties. The function of the business manager inevitably requires him to bear risks. He normally wants very much to choose and control his risk exposure and to bear those risks which he feels he can

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handle skillfully to a favorable outcome. By the same token he wants to drive to a minimum the uncertainties whose outcomes are largely a matter of chance or caprice beyond his knowledge or control.

If the futures market is examined in this context, it will be found to be a very valuable instrument among the tools for business management.

FUTURES TRADING NOTE:¹

What is "BASIS"?

Last August 10, 1964, two members of the Minneapolis Grain Exchange (one representing a country shipper the other a flour manufacturer) were discussing the market. Actual cash prices weren't mentioned, although the September Future (the basis future) was \$1.60 $\frac{7}{8}$ a bushel.

"What's the Minneapolis cash basis today?"

"It's going up. I just saw the market close at two under for ordinary protein compared with four under a week ago."

"That means that basis country track it's around 22 under at Fargo. Can we do some business?"

"My basis on those ten Fargo cars I offered you last week is 18 under, but the protein is 15 percent and it's 12 percent moisture; that should carry a good premium."

"All right I can take ten cars of 15 protein at 16 under. Is it a deal?"

"Yeah. We can start loading tomorrow. It's a deal."

To himself: (That's a profit of two cents — pretty good when you consider the market fell off a dime since I bought.)

* * * * *

In view of the promiscuous use of the word "basis," as illustrated in this conversation, it seems essential that at least a few

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of the *key* meanings of the term be clarified. The following discussion may, it is hoped, help the novice to take a few first steps with greater understanding.

UNSCRAMBLING TERMINOLOGY RELATING TO "BASIS" IN FUTURES TRADING (Key to symbols referred to in text):

Figure IX

o	o	o	o	o	o	o	----	Prices for commercial product transactions: various locations, grades, delivery terms, etc.
o							----	Price quotation for spot commodity of contract grade meeting all contract delivery terms
x							----	Price quotation for nearest future
x	)						----	Prices of more distant futures
	)							
x	)							
	)							
x	)							

The noun "basis" is one of the very common trade terms used by futures market operators, but one which is misunderstood by practically anyone outside the trade. Trying to get traders to give a sharp definition of the term is a frustrating experience. Every one of them can use the word to describe an exacting set of specifications, and another trader can understand this meaning without any trouble; still, the next sentence may use "basis" in an entirely new sense. (The confusion over the word basis requires special care when the word pops up as an adjective or preposition, as in the cases of basis grade, basis f.o.b., basis Chicago, basis No. 2 Yellow corn, or even in its more usual dictionary meaning, as when we speak of quotations on a firm basis.)

In order to help pin down the special uses of the word basis

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as it relates specifically to futures trading, I would suggest that the word be defined in three stages. First, we can attempt a general statement which covers the essential aspects of its meaning *whenever* the word is used as a noun in connection with futures trading:

1. **BASIS** (general definition)

Whenever the word "BASIS" is used in connection with futures trading, it is a spread or difference (premium or discount) between the price of a futures contract (x) and a price relating to actual (o) grain (or other product).

Usually the price of the futures contract for the nearest delivery month (X) is regarded as one side of this spread (for instance O-X, or o-X); however, more remote deliveries (x), may be specifically designated in certain cases.

The second stage, a specialized meaning, is one that may not relate to a specific transaction, but rather applies to the state of the market, future versus spot. It is a sort of bellwether guide or statistic. In order to distinguish it without trying to coin a lot of new words we can call it "*the basis*."

2. **THE BASIS** (in market reporting) sometimes called "the cash basis."

This is a statistical statement reflecting (as of any given time the premium or discount over the nearby future (X) of the cash price for a deliverable product of contract grade (O). The cash product is assumed to be available on a spot basis, ordinarily at the same delivery point as applies to the futures contract (i.e., O-X.)

"The basis" is primarily important as a market reporting device. It ties the futures market to the spot market, and shows how the relationship between the two change over time. The premium or discount reported as of any given time is a valuable point of reference for traders.

3. **MY BASIS** (a specific trade position)

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This use of the word "basis" expresses *the premium or discount of a specific commitment (o) in actual grain (or other product) over or under a specific futures quotation (X or x.)*

If no delivery month is specified, the nearby future (X) is assumed to be the one employed; otherwise a particular delivery month is stated. The transaction in actual product refers to a particular grade, quality, location, delivery point and all considerations that identify some specific commitment (o) I have made. MY BASIS would refer to a purchase transaction or commitment in actual product, expressed as a price premium or discount from the specified futures quotation in which I have made a corresponding hedge sale. In other words, this transaction results in my being "long the basis" (or, if I have a commitment to deliver specific actual product and have covered this by purchasing a futures contract I am "short the basis.")¹

MY BASIS represents the cost relationship I have established by a pair of specific trades or ownership positions (one in cash and one in futures). When used in this sense MY BASIS remains unchanged as long as these remain in effect, regardless of what may happen in the vertical price fluctuations on the market in the interim. I may, of course, switch my basis from one futures position to another in which case I revise my basis from, say, two cents under March to, perhaps, three cents under May. In any case my basis represents the price difference between a pair of firm commitments, and the size of the premium or discount represents a cost bench-mark against which I

¹ The truth is that I am long MY BASIS, not long THE BASIS, in this case. An important part of what I have at risk is measured by THE BASIS (O-X) but I also have at risk, in addition, whatever spread exists between the quoted spot market -O- and the actual product I am committed for -o.

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hope to profit by a favorable change in price relationships.²

In this case, another aspect of MY BASIS has to be carefully distinguished. This may be referred to as my “close-out” or “opportunity” basis. This calls for the quotations at which I either do close out my position on both sides or have the opportunity to close out my positions. To the extent that the spread has moved from MY BASIS (initial commitment) to a more favorable close-out basis my transactions have been successful. This “opportunity” basis then represents a trial balance that may be taken at any given time.

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DISCUSSION

CHAIRMAN GAUMNITZ: Mr. Arthur, you have certainly given us a wealth of ideas and information. Thank you.

Now, do you have some questions?

BAKKEN: I would like to ask if there is such a thing as a perfect risk.

ARTHUR: As a perfect risk? You take me pretty far over into the physical universe and the physicists say there is no such thing as a phenomenon that is so clearly defined that even with mass performance you would get absolute certainty.

On the other hand, you can approach pretty close to certainty. I think you would find it approached in the world covered by the natural scientists more accurately than you do in the world of the humanities or social sciences.

BAKKEN: Insurance companies approach it pretty closely, don't they, with the actuarial tables?

² In daily operation of the market, the terminal elevator operator located at an authorized delivery point frequently hedges actual grain which meets the contract specifications in all respects. For such trades, MY BASIS can be considered practically identical with THE BASIS as of the time the trade was instituted.

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ARTHUR: No, I think insurance companies generally leave a pretty good padding under their actuarial tables, figuring that they have room in case other contingencies arise. They go a tremendous distance of course, from the complete uncertainty which exists for any individual case towards the greater stability of the mass phenomena, that's sure.

McROSTIE: In the security business, we talk about the distinction between intrinsic values and market analysis or charting techniques to try to minimize risks or define them. Does this kind of distinction exist in the trading in commodities? If so, would you comment on the reliability of each for the minimization of risks.

ARTHUR: I don't know that I am very competent to comment on it. I think you are referring to the distinction between the pattern trader and the analyst who is looking for value.

The pattern trader it seems to me is a fellow who denies that there is a rational way of getting at a future level of prices other than simply to expect the mass movements of the market to follow something that was established in the past and to expect history to repeat itself, more or less.

It seems to me this is a slender reed to lean on with all of your life savings. On the other hand, it may be a useful device if you are searching desperately for clues. Don't ignore it, but, on the other hand, I suspect that the fellow who just relies upon it explicitly is down near the "uncertainty" end of my scale.

MUTTI: You made a reference to a broiler integrator contractor contract some ten months ago. Who took the other side of this position in this case?

ARTHUR: As I understand it, it was a chain store organization, a regional chain, if I remember correctly. The idea, I presume, was that by this kind of an arrangement, there was

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implicit a sharing of the profits as well as the losses. The broiler integrator was going to operate with only half as much impact of the price swing as he would have if he carried all of the risk and sold at the market from week to week.

MUTTI: Now, does the chain bear the impact of this uncertainty? They are doing this with a number of products so that as far as they are concerned, what if they do lose in this particular area. They hope in some other place to balance out. Is this the real reason why the food chain is willing to do this.

ARTHUR: Your suggestion is one possibility. We are getting over into pure conjecture. I certainly don't want to presume that either the article stated or that I know the fact in this case.

It does seem to me fairly clear that chain stores in their pricing do have a certain amount of absorbent layer of margin. They can manage their marketing of broilers to a certain extent because they don't have to reflect every change in the wholesale level in their retail repricing. This may be one of the elements in addition to the one you mentioned.

Your comment, I believe, refers to the fact that they can soak up the give and take in broilers because they sell so many products. Even in broilers they may have enough stickiness in the relationship between wholesale and retail pricing that they could absorb some of the variance in price in order to be either assured that they will have a dependable supply. It may be one of their motivations — or they may just feel that the odds are in favor of the prices going up, and they would like to be contracted so that they would gain a portion of that rise as well as their usual margin on selling broilers.

It is an interesting thing that yesterday in response to a question, one of our speakers — it was Mr. Wilson from Continental Grain — said that we total up our cash position and

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our futures position speaking of them as though the cash position includes a forward sale to a customer as well as actual holdings of inventory. In other words, it includes a lot of commitments as well as ownership, and these commitments provide a "net at risk position" which will correspond with Mr. Wilson's cash position in order to know what you might want to offset with a futures market hedge.

This is an interesting phenomenon, and I suspect that we could say categorically that the accounting profession prefers to go down another road and doesn't really bring this into the official books of account of a firm. It is a memorandum account, and the accountant thinks he is being conservative by not picking up, on the results of the firm, anything until it has been delivered.

The balancing of the total at risk position of a firm by using a futures market is a very intriguing arrangement with a lot of kinks in it.

ANDERSON: I am intrigued by the spectrum of certainty-uncertainty of the speculator. I don't think I am taking issue with what you have said here, but I would like a clarification on the individuals that we find at the two ends of the spectrum.

It seems to me you have implied in your discussion that these people are dealing essentially with the same phenomenon, price change in a market, but that their abilities to quantify and to make probabilistic statements about the quantification of cause-effect relationships, may limit their performance in this market.

So, I am simply wondering if the phenomenon of price change is in fact at some point on this spectrum, but that individuals dealing with that phenomenon tend to fall at different points along your spectrum.

ARTHUR: I will try to comment and see whether that

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will pull your comment into the context of my discussion. In the first place, a fellow who has an effective blindfold on him is maybe thought of as being down here. (Indicating toward “uncertainty”)

A fellow whose eyes are open and can work in an area where he feels he has some confidence about the environment, about the context within which he is taking risks, moves up towards the certainty end of the spectrum.

Now, I think what you had in mind was that if one superimposes and redefines this spectrum, he could conceive it in terms of how predetermined price changes are — where the element that “God only knows” is going to put us on the scale, after considering the things that only our lack of education prevents us from moving well over toward certainty.

I will be darned if I know. Certainly, the economics professor has not reached far enough to give us any assurance that we can put a specific point for this on our chart up here. At least, I don’t know any economists who are invariably successful in futures trading, but I think you are using the spectrum with a different definition of the phenomenon you want to depict on it.

ANDERSON: Yes, I am sure I am. I just wanted your comments on this. I think what I am saying essentially is that some of the forces determining price movement in a market are quantifiable, some are unquantifiable, some can be stated in a functional relationship probabilistically, some cannot, and like you say, God only knows where it is going to fall in this spectrum, but conceivably, theoretically, it could fall at some point between certainty and uncertainty.

ARTHUR: Yes, I think it could, and it probably would fall in a different point depending upon how long a look we want to take into the future.

I remember Professor Taussig, and this dates me, I think

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I was in his last class, and he gave up teaching after me (Laughter). In his class he said that if he were selecting a man to represent him in floor trading on a commodity exchange or operating on the floor of the New York Stock Market, and had his choice between his best student of economics and a man who sensed mass psychology changes, who had a commercial touch, who worked by what seems to be intuition, he said, "For short time trading, give me that 'commercial touch' guy. I haven't done anything to make a fellow the most skilled man in this short time swing analysis in all my experience in training economists."

So, there is an area here that is interesting for contemplation, but I don't know whether we can hope to find any tangible answer.

ANDERSON: On terminology, one last question. Would it be a fair statement, then, if we are talking about the phenomena of price movement in a market of this type to say it is an amalgamation of risk and uncertainty in the terms that you cast this?

ARTHUR: Yes, I think that any business judgment is going to be somewhat of a mixture between the certainty and uncertainty, and as you have a bigger proportion of things which you can classify as manageable "risks", you enable the businessman to be operating up nearer this certainty end of the spectrum.

GOLDBERG: The other speakers gave estimates of how they believe futures markets will be utilized in the future — as to the expansion or decline in their utilization. On the basis of your analysis, how do you feel about the future of futures markets?

ARTHUR: I don't know that I can get any basis for a firm conclusion. We certainly can think of things that are happening to the institutions we live with which reduce the degree

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to which we may have to turn to a futures market as an element to enable us to do business with decisions more near the certainty level, the certainty end of the scale.

For instance, if the government takes over the problem of administering prices and makes it work, the futures market is constricted in the services for which it will be useful.

On the other hand, I can conceive of a government administered price structure in which the government would leave room for a futures market to operate in terms of some of the internal adjustments of that price structure.

So, here I don't think I would say that a greater administration of prices by the government necessarily rules out a place for a futures market. Past experience would suggest that it would, but past experience also suggests that the government hasn't really found the ideal answer to these geographic and quality differentials so, I don't know how to answer it in any determinative sense. I wish I could. Certainly the futures market has been very useful. It has been useful especially where the commodities are staples and not differentiated products.

It has probably been more useful in an economy where integration, vertical integration, has not been too big a factor, although this I don't think is a safe conclusion because only one transfer in the vertical movement of commodities may be enough to justify a futures market.

EHRICH: Just to speak to that last point, I recall talking to some grain people in Minneapolis who are integrated. The milling firm had a terminal elevator, etc. They say their position in a futures market with respect to their mill operation does not depend at all on what they are doing in the terminal market. They have got their boys selling and buying hedges independently in the open market because they feel that this gives them the best use of the futures market. In other

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words, they are fully integrated. They could cancel this all out, but they don't, they choose not to.

ARTHUR: I think this is a very useful observation because we see it time and again. It existed within Swift and Company. It exists in the managing of the cattle business, the Kern County Land Company, where they have huge breeding herds and feed lots. They run these two segments independently because they feel that, just as there is room for people to work with basis in dealing in grains, there is room for people to take advantage of the geographic differentials within segments of an integrated firm.

EHRICH: Doesn't this also speak to Gruetzmacher's point on the superior intelligence of the market. In other words, if we assume that the market is a conglomeration of all opinions into a price, then the best way to arrive at the value and rates in the accounting-type operation within an integrated firm is, I think, to use this free market price.

ARTHUR: Yes. A free market does two things here, however. First, it does permit all kinds of pressures to have their impact whereas a formulated schedule that somebody drew up ahead of time may not be responsive in that way. But the second thing it does is to permit the fragmentation of a total risk so that a person can apply his own decisions to those elements of this total risk picture (geographic differences, transportation, etc.) when he thinks his expertness has greater prospect of success than when he has to carry the whole risk of the major price swing in conducting business. So it does both things, and both are very valuable contributions.

GAUMNITZ: I think we have given Professor Arthur quite a strenuous workout. (Applause)